Arlington Memorial Bridge: Boundary Channel Extension HAER No. DC-7B
Memorial Avenue at the base of Arlington Cemetery,
spanning the Mount Vernon Memorial Highway and Boundary Channel
Washington
District of Columbia

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HAER
DC,
WASH,
563-B-

HISTORIC AMERICAN ENGINEERING RECORD

ARLINGTON MEMORIAL BRIDGE: BOUNDARY CHANNEL EXTENSION

HAER No. DC-7B

Location: Memorial Avenue at the base of Arlington Cemetery spanning the George Washington Memorial Parkway and Boundary Channel. This bridge is an extension of the western end of the Arlington Memorial Bridge and links the District of Columbia with Arlington, Arlington County, Virginia.

UTM: 18/321160/4305840
Quad.: Washington West

Date of Construction: Designed 1929, Completed 1932

Architects: McKim, Mead and White, New York, New York; William Mitchell Kendall, Designer

Engineer: John L. Nagle, Designing Engineer, Corps of Engineers, W.J. Douglas, Consulting Engineer

Contractor: N.P. Severin, Chicago, Illinois

Present Owner: National Capital Region
National Park Service
Department of the Interior

Present Use: Extension of the Arlington Memorial Bridge, a bridge carrying traffic to Arlington Cemetery across the Boundary Channel of the Potomac River and two lanes of the George Washington Memorial Parkway.

Significance: This bridge was designed in 1928 as part of the comprehensive plan for a memorial bridge and drive from the Mall in Washington to Arlington National Cemetery in Virginia. Patterned in the neoclassical style to match the Arlington Memorial Bridge, the Boundary Channel Extension Bridge is as equally fine in its detailing. Although designed and built almost thirty years after the McMillan Commission was disbanded, this structure reflects the original intention of the Commission which was to build a memorial bridge on this site which would join the North and South.

Historian: Elizabeth M. Nolin, 1988

The Boundary Channel extension connects the traffic circle at Arlington Memorial Bridge to Memorial Avenue and the entrance to Arlington National Cemetery. This bridge carries traffic over the four lanes of the George Washington Memorial Parkway (see HAER No. VA-42) which are divided by the Boundary Channel. As with the Rock Creek and Potomac Parkway approach, Watergate, and Seawall (see HAER No. DC-7A), the Boundary Channel extension of the Arlington Memorial Bridge was designed as part of a comprehensive project with the Arlington Memorial Bridge (see HAER No. DC-7) as the main structure.

As with the other components of this project, the Boundary Channel extension is built of reinforced concrete. The bridge is faced with light gray granite which has a bush hammered finish. The bridge consists of three arches, with the arch spans over the parkway measuring fifty feet wide and the arch over Boundary Channel measuring one hundred feet in width.[1] As mentioned this bridge is similar in style to the Arlington Memorial Bridge, not only in its dimensioned granite facing but also in the treatment of the keystones in each of the arches. The arches which span the roadway have a keystone with a plain face, while the arches spanning water feature a buffalo head carved on the keystone. The piers on either side of the Boundary Channel are styled similarly to the piers of the Memorial Bridge, but they have a plain facade rather than the carved facade of eagles and fasces. The deck of the roadway is paved with four inch by four inch granite pavers which are laid in a fish scale or fan pattern. Similar to the Arlington Memorial Bridge, this bridge was built for pedestrian as well as vehicular traffic, and so a pair of broad sidewalks flank the roadway. A large, turned granite rail and balusters, on either side of the walkway, give the finishing touch to this bridge, and again make it seem like more of a continuation of the Arlington Memorial Bridge rather than a separate structure. The east and west ends of the bridge have granite pylons on both the north and south sides. The eastern pair, which faces into the traffic circle serve as a base for a set of eight foot tall granite eagles, whereas the western pair remain unornamented. Paul C. Jennewein was the sculptor for the pair of eagles as well as the buffalo head keystones.

The first phase of this particular project included the improvement of Columbia Island with later phases consisting of the building of additional bridges to connect the island with the Virginia mainland. In an article written by John Nagle, the engineer in charge of construction of the Memorial Bridge, Nagle states:

> It will, of course, be necessary to develop that area of the island adjacent to the western extremity of the bridge to form an entrance plaza balancing the bridge plaza on the Washington side, and it will also be necessary to connect the island with the mainland by two or more small bridges which will be in general architectural agreement with the main bridge. One of these

---

[1] Dimensions taken from construction documents. Drawing number 4E3-1.

bridges will lie on the prolongation of the axis of the main bridge[2] and the second will lie at the upper end of the island. The location of a possible third bridge[3] will be at the lower end of the wider portion of Columbia Island.[4]

Discussions on aesthetics and the Washington and Virginia termini concerned the Arlington Memorial Bridge Commission for quite some time. Practicality and romanticism found common ground on both shores. Growth of the city after World War I led to volumes of traffic that increased each year. Ideally, the Arlington Memorial Bridge would carry only vehicles which were traveling to and from the Arlington National Cemetery; realistically however, increases in traffic had to be considered. The circular intersection at the bridge had to handle vehicles not only from Washington, D.C. but also Lee Highway (Route 29) from the north and the Mount Vernon Memorial Highway from the south. A bridge spanning Boundary Channel also had to make the transition from a formal mall and bridge composition to the more park-like setting of Arlington Cemetery.[5]

Before the work could be started on the Boundary Channel Extension Bridge, the improvement of Columbia Island required completion. The dredging for this project was carried out by the United States Engineer Office based in Washington, D.C.[6] Dredgers took fill from an area approximately 4000 feet long by 450 feet wide on the eastern side of the island; they spread the fill over the rest of the island in order to raise its height to match that of the land at the Lincoln Memorial.[7]

Plans for Columbia Island were drawn up and revised many times, each revision bringing a simplification of the plan. One of the more elaborate designs for Columbia Island included circular Greek temples at the intersection of the northern and southern roads where they met the roadway coming off of the bridge. Also part of this proposed design were two large columns, 181 feet high which were to represent the North and the South. The

---

[2] This statement refers to the Boundary Channel Extension Bridge.

[3] This statement refers to the Boundary Channel Bridge which carries the George Washington Memorial Parkway from Columbia Island over the Boundary Channel to Virginia. See HAER No. DC-19.

[4] John Nagle, "The Arlington Memorial Bridge," The Military Engineer, (1928), 159.

[5] Sue A. Kohler, The Commission of Fine Arts: A Brief History 1910-1984, (Washington, D.C.: Commission of Fine Arts, 1984), 24.

[6] John Nagle, "The Arlington Memorial Bridge," The Military Engineer, (1928), 159.

[7] ibid, 158.

onset of the Depression reduced funds for the project and the temples were omitted from the plan in 1930.[8] By the end of 1931 arguments made against the construction of the columns prevailed (due to the proximity of the local airport), even though the architect, William Kendall[9] felt they were an integral part of the total composition. In 1940 another, simpler version of the design was submitted to the Commission, its cost being half of the original.[10]

The contractor for this bridge was N.P. Severin of Chicago, Illinois. At one point, the construction of the bridge was held up due to foundation problems while working on the abutments; "rotten rock" was struck. This rock had to be removed so that the foundations could be placed on solid ground. Three dredges were used to clear away the clay and "rotten rock." To help smooth the path of the bridge's construction, each of the stones which made up the granite facing of the bridge were numbered.[11]

Because this bridge was a small component of a much larger project, information which covered the detailed construction of this bridge was difficult to obtain. Although the Boundary Channel Extension Bridge was a secondary feature to the completion of an important project, its style and detailing is equal to that of the Arlington Memorial Bridge.

---

[8] Kohler, 24.

[9] Employee of McKim, Mead and White a prominent architectural firm in New York City. Designer for the Arlington Memorial Bridge.

[10] Kohler, 26.

[11] "Memorial Bridge Work Is Delayed," The Evening Star, May 16, 1929, Washington, D.C. Found in a file on Bridges, Arlington Memorial, 1922-1931, MLK Library.

Bibliography

Arlington Memorial Bridge Commission, Drawings of the Boundary Channel extension of the Arlington Memorial Bridge. Located at National Capital Region Park Headquarters, Washington, D.C. Also located at the National Archives, Cartographic Division, Alexandria VA.

Kohler, Sue A. The Commission of Fine Arts: A Brief History 1910-1984. Washington, D.C.: The Commission of Fine Arts, 1974.

Nagle, John L. "The Arlington Memorial Bridge." The Military Engineer. Volume XX Number 110, (March-April 1928): 154-160. Located at the Library of Congress, Washington, D.C.